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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/589,651

08/16/2006

James John Maley

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EXAMINER

FAROKHROOZ, FATIMA N

ART UNIT

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/589,651	<b>Applicant(s)</b> MALEY ET AL.	
	<b>Examiner</b> FATIMA N. FAROKHROOZ	<b>Art Unit</b> 2889	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 08/16/06.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>08/16/06</u> .  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 6-7, 10, 14-17, 22 and 29 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Edwards et al (US 5045007) further in view of Miles (US 3228548) and Smirnov et al (WO 009408786).

Regarding Claims 1, 10, 15-17, 22 and 29; Edwards teaches a cathode-ray tube (see at least Fig.1 and the corresponding text) having an envelope including a panel and a neck connected by a funnel, the funnel comprising: a main body portion having a seal edge and a neck (attaching a seal edge of the main body portion to the panel; mounting an electron gun in the neck; evacuating and sealing the envelope for claim 10 and a cathode ray tube having an envelope including a panel and a neck connected by a funnel, the neck containing therein an in-line electron gun oriented for transpose scanning of electron beams emitted from the in-line electron gun for claim 29).

Edwards does not teach that the main body portion having at least one region with a higher tensile stress than other regions of the main body portion; a first protective coating on an exterior surface of the main body portion, the first protective coating

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covering at least a portion of the at least one region, the first protective coating being of a composition and thickness to substantially reduce susceptibility of the at least one region to mechanical damage; and a second protective coating on the exterior surface of the main body portion that covers at least a portion of the first protective coating, the second protective coating being of a composition and thickness to protect the funnel from moisture contact.

In the same field of endeavor of cathode ray tubes, Miles teaches a CRT wherein the main body portion having at least one region with a higher tensile stress than other regions of the main body portion; a first protective coating on an exterior surface of the main body portion, the first protective coating covering at least a portion of the at least one region, the first protective coating being of a composition and thickness to substantially reduce susceptibility of the at least one region to mechanical damage in order to minimize tensile stresses (see Fig.1 and 2 and the corresponding text such as, "the desirability of producing a coating which is able both to prevent the occurrence of surface imperfections in a glass body and at the same time to minimize tensile stresses at the surface of the body becomes apparent. It is an object of this invention to provide such a coating. It is a further object to provide a coating which may be applied to selected portions of the surface of a glass article, and to provide a method for strengthening such an article by the application of such a coating to selected areas).

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Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to add the first coating, as disclosed by Miles, in the CRT of Edwards in order to minimize tensile stresses.

Further, the previous combination is silent regarding a second coating for moisture contact prevention.

Towards solving the same problem of water contact prevention for various devices, Smirnov teaches a MULTI-PURPOSE COATING TOWARDS WATER CONTACT PREVENTION AND CORROSION PREVENTION in order to PROTECT VARIOUS DEVICES FROM CORRISION (also see materials for the coating).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to add the MULTI-PURPOSE coating (FOR VARIOUS DEVICES) as disclosed by Smirnov, in the CRT of the previous combination in order to PROTECT VARIOUS DEVICES FROM CORRISION.

Regarding claim 6, the previous combination implicitly teaches the second coating applicable for a CRT since the same problem of corrosion prevention and prevention of water contact is disclosed as being solved for VARIOUS DEVICES by Smirov.

However Smirov does not teach that the second protective coating substantially covers the main body portion and extends from proximate the neck to the seal edge.

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It would have been obvious to a person having ordinary skill in the art at the time the invention was made to make adjustable the region for the second coating, since the provision of adjustability, where needed, involves only routine skill in the art.

Regarding claims 7 and 14, Smirnov teaches a cathode ray, wherein the second protective coating is silicone layer containing graphite. Also see rejection in claim 1 above. The same reason to combine art as in claim 1 applies.

Claims 2,3,11,18 -20 ,23-26 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Edwards et al (US 5045007), Miles (US 3228548) and Smirnov et al (WO 009408786),further in view of Tachizono et al (US 5575953).

Regarding Claims 2, 3, 11, 18,-20, 23-26, the previous combination teaches the invention set forth above (see rejection in Claim 1 above).

The combination is silent regarding the first protective layer being a silicate layer (claims 2,23 ); wherein the silicate layer contains aluminum oxide, silicon carbide, titanium carbide, or boron carbide (claim 3);wherein the first protective coating is a silicate layer containing inorganic fillers (for claims 11,18,25) ;wherein the silicate layer is selected from the group consisting of a potassium silicate layer, lithium silicate layer, and a sodium silicate layer (for claims 19,24); wherein the inorganic filler is selected from the group consisting of an aluminum oxide, a silicon carbide, a boron carbide, and a titanium carbide (for claims 20,26).

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In the same field of endeavor, Tachizono teaches a CRT wherein a silicate layer is used as a coating wherein the silicate coating contains a layer of potassium silicate and silicon carbide in order to achieve water resistance (see Abstract and col.2, lines 1-10).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to add the silicate coating as the layer of potassium silicate and silicon carbide, as disclosed by Tachizono, in the CRT of the previous combination in order to achieve water resistance.

Claims 4, 12, 21 and 27 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Edwards et al (US 5045007), Miles (US 3228548) and Smirnov et al (WO 009408786), further in view of Park et al (US 6396204)

Regarding Claims 4, 12, 21 and 27, the previous combination teaches the invention set forth above (see rejection in Claim 1 above). The combination is silent regarding the deflection angle for the CRT.

In the same field of endeavor of CRTs, Park teaches a CRT wherein the deflection angle is 125-135 degrees (90 or more and 100 degrees or more in description of Fig.2) in order to effectively enhance electron beam deflection efficiency with minimized deflection power (See Summary of Invention).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to modify the deflection angle, as disclosed by Park, in the

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CRT of the previous combination in order to effectively enhance electron beam deflection efficiency with minimized deflection power.

Claims 5,13 and 28 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Edwards ET al (US 5045007), Miles (US 3228548) and Smirnov et al (WO 009408786) further in view of Sano et al(US 6087767).

Regarding Claims 5, 13 and 28, the previous combination teaches the invention set forth above (see rejection in Claims 1, 10, 15, and 22 above).

The previous combination is silent regarding the tensile strength of the CRT portions.

In the same field of endeavor, Sano teaches a CRT wherein the CRT has a tensile stress of at least 1350 pounds per square inch in order to form a pyramid like shape for the cone portion (col.3, lines 1-6).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to modify the CRT portion, as disclosed by Sano, in the device of the previous combination in order to form a pyramid like shape for the cone portion.

Claim 8 is rejected under 35 U.S.C. 103 (a) as being unpatentable over Edwards ET al (US 5045007) and Smirnov et al (WO 009408786),further in view of Park et al (US 6396204) and Sano et al(US 6087767).



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Regarding claim 8, Edwards, Smirnov, Park and Sano teaches a cathode ray tube having an envelope including a panel and a neck connected by a funnel, the funnel comprising: a main body portion having a seal edge and a neck, the main body portion having a deflection angle of at least 125 degrees and at least one region with a tensile stress of at least 1350 pounds per square inch; a first protective coating on an exterior surface of the main body portion, the first protective coating covering at least a portion of the at least one region, the first protective coating being of a composition and thickness to substantially reduce susceptibility of the at least one region to mechanical damage; and a second protective coating on the exterior surface of the main body portion that covers at least a portion of the first protective coating, the second protective coating being of a composition and thickness to protect the funnel from moisture contact (see rejection for claims 1, 4 and 5).

Claim 9 is rejected under 35 U.S.C. 103 (a) as being unpatentable over Edwards ET al (US 5045007) , Smirnov et al (WO 009408786), Park et al (US 6396204) and Sano et al(US 6087767),further in view of Tachizono et al (US 5575953).

Regarding Claim 9, the previous combination teaches the invention set forth above (see rejection in Claim 8 above).

The combination is silent regarding the first protective layer being a silicate layer; wherein the silicate layer contains aluminum oxide, silicon carbide, titanium carbide, or boron carbide.

In the same field of endeavor, Tachizono teaches a CRT wherein a silicate layer is used as a coating wherein the silicate coating contains a layer of potassium silicate and silicon carbide in order to achieve water resistance (see Abstract and col.2, lines 1-10).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to add the silicate coating with the layer of potassium silicate and silicon carbide, as disclosed by Tachizono, in the CRT of the previous combination in order to achieve water resistance.

#### ***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fatima Farokhrooz whose telephone number is (571)-272-6043. The examiner can normally be reached on Monday- Friday, 9 am - 5 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Minh-Toan Ton can be reached on (571) 272-2303. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you

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have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Fatima N Farokhrooz/  
Examiner, Art Unit 2889

/Joseph L. Williams/  
Primary Examiner, Art Unit 2889